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Notice of Allowability	Application No.	Applicant(s)	
	10/655,442	BARON ET AL.	
	Examiner	Art Unit	
	Sudhanshu C. Pathak	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to April 12th, 2007.
2. ☒ The allowed claim(s) is/are 1-5.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
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DETAILED ACTION

1. Claims 1-5 are pending in the application.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brian J. Cromarty on June 21st, 2007.

- In order to avoid 112 rejection the claims have been amended as follows:

➤ **Replace Claim 1**

with

"A method of modulation of a carrier, in particular an RF carrier, in which two quadrature components I and Q are generated and a local frequency is vectorially modulated with these components, comprising: filtering the quadrature components I and Q around a zero frequency so as to create a small free frequency bands; inserting alternately into this small free frequency band, into the I and Q components, a low-frequency subcarrier sufficiently remote from the zero frequency so as not to engender any shift error of the continuous component and of a sufficiently low relative level with

respect to that of the signal I and Q as not to disturb the latter; demodulating, a fraction of the vectorially modulated signal, in a synchronous manner with the same local frequency alternately cosine-wise and sine-wise; low-pass filtering the demodulated signal so as to extract the low-frequency subcarrier marred by a first set of amplitude and phase errors corresponding successively to a second set of amplitude and phase errors with which the signals I and Q are marred after the vector modulation; measuring said first set of amplitude and phase errors; and feedback correcting the two quadrature components I and Q to compensate for said second set of amplitude and phase errors."

➤ **Replace Claim 4**

with

"A device for modulating a carrier, in particular an RF carrier, comprising: a digital processor for generating two quadrature components I and Q; a local base frequency generator; a vector modulator for modulating this local frequency by these two components; means for filtering of the two quadrature components I and Q around a zero frequency; means for generating a low-frequency subcarrier; means for inserting said low-frequency subcarrier alternately into the I and Q components; means for demodulating, a fraction of the output signal from the vector

modulator with the local frequency in a synchronous manner alternately cosine-wise and sine-wise; a low-pass filter for filtering the demodulated signal so as to extract the low-frequency subcarrier marred by a first set of amplitude and phase errors corresponding successively to a second set of amplitude and phase errors with which the signals I and Q are marred after the vector modulation; means for measuring said first set of amplitude and phase errors; and means for feedback correcting the two quadrature components I and Q on the basis of said measurements so as to compensate for said second amplitude and phase errors."

Allowable Subject Matter

3. Claims 1-5 are allowable over the prior art of record because the cited references do not contain the specified limitation of a method of modulation of a carrier, in particular an RF carrier, in which two quadrature components I and Q are generated and a local frequency is vectorially modulated with these components, comprising: filtering the quadrature components I and Q around a zero frequency so as to create a small free frequency bands; inserting alternately into this small free frequency band, into the I and Q components, a low-frequency subcarrier sufficiently remote from the zero frequency so as not to engender any shift error of the continuous component and of a sufficiently low relative level with respect to that of the signal I and Q as not to disturb the latter; demodulating, a fraction of the vectorially modulated signal, in a synchronous manner with the same local

frequency alternately cosine-wise and sine-wise; low-pass filtering the demodulated signal so as to extract the low-frequency subcarrier marred by a first set of amplitude and phase errors corresponding successively to a second set of amplitude and phase errors with which the signals I and Q are marred after the vector modulation; measuring said first set of amplitude and phase errors; and feedback correcting the two quadrature components I and Q to compensate for said second set of amplitude and phase errors.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sudhanshu C. Pathak
Examiner
Art Unit 2611



CHIEH M. FAN
SUPERVISORY PATENT EXAMINER